

Covalent Chip Activity

For the statements below, use the correct term from the word bank to fill in the blank.

Word Bank (not all words will be used)			
Electrons	Attract	Non-Metals	Complete
Protons	Metals	Incomplete	Share
			Trade

1. Covalent bonds form between _____ and _____.
2. Atoms _____ electrons in covalent bonds.
2. In a covalent bond, each atom ends up with a _____ outer shell.
3. Non-metal atoms have a high ability to _____ electrons.

Non-metals tend to **attract** electrons to themselves because of strong attractive forces of the protons in the nucleus.

Every atom wants to achieve **stability** and to do so they must fulfill their goal to **complete their outer shell**. For most atoms, **8 valence electrons** are needed, for some atoms like hydrogen, **only two valence electrons** are needed.

When two **non-metals** bond together, they have to **share electrons** because neither non-metal is willing to give their electrons up.

A pair of electrons that is shared between two atoms is called a **shared pair of electrons**.

Today we will look at covalent compounds using chips to represent the valence electrons. **The GOAL is to place the chips in such a way that each atom ends up with a full outer shell by SHARING electrons.** Each chip represents 1 electron. If one atom shares an electron with another atom, the other atom must share an electron back with that atom. More than one pair of electrons can be shared. After the chips are placed in such a way that every atom has a full shell:

1. draw the picture in the square provided
2. draw a circle around each atom and the electrons that it has and that it is sharing
3. draw a final picture using a line to represent the shared pair of electrons

EXAMPLE: Formula: Cl_2



Physical Science**Name** _____

DSHS

Period _____

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Formula: CH₄Formula: N₂Formula: H₂OFormula: PI₃

Formula: HCl

Formula: CO₂